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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,770	03/15/2001	Jacobus Haartsen	040071-498	5487
7590 06/18/2004				
Ronald, L. Grudziecki BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404			EXAMINER HA, DAC V	
			ART UNIT 2634	PAPER NUMBER 5

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/808,770

Applicant(s)

HAARTSEN, JACOBUS

Examiner

Dac V. Ha

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-9,11-13,16-18,21,22,25 and 26 is/are rejected.
- 7) ☒ Claim(s) 5,6,10,14,15,19,20,23,24,27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claims 7-10** are objected to because of the following informalities:

Claim 7, line 10, punctuation (i.e., semicolon) should be added after the word "sequence".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 7-10** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 ends with the word "and" and without a period, thus incomplete.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mouldsley (US 6,407,993) in view of Hottinen et al. (US 5,995,499) (hereinafter Hottinen).

Regarding claim 21, Mousley discloses the claimed subject matter including "a modulator operative to apply at least one modulation scheme to the data packets prior to transmission; and transmission means to transmit the modulated data packets" in Figure 7, elements 50, 60, 68. Mousley also discloses the use of a "training sequence" "inserted" into the data packet to be transmitted in Figures 4, 5, elements 22, 32, respectively; Col. 3, lines 53-55.

Mousley differs from the claimed invention in that Mousley doesn't teach the claimed subject matter "a processor operative to insert at least one flag to identify a corresponding reference training sequence to be selected by the receiver and to indicate whether a training sequence is inserted within data packets to be transmitted, the processor inserting the training sequence at a midamble of the data packets between an initial portion and a first segment". The attention is now directed to Hottinen.

Hottinen discloses a TDMA communication system, which utilizes training sequence as part of the transmission signal. Particularly, Hottinen discloses the use of different training sequences as those utilized in GSM system (Col. 1, line 65 to Col. 2, line 2).

By fact, the training sequence is a known sequence at both the transmitter and the receiver. The training sequence is utilized in communication system to facilitate estimation of channel characteristics, and the result is used to adjust operation parameter in the receiver so as to combat, for example, interferences. Since the training sequence must be known to both transmitter and receiver, there are only two

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method to accomplish this. Either a copy of the training sequence that is used in the transmitter is provided at the receiver by means of pre-stored or local-generated; OR the desired training sequence is determined by process of elimination OR the information about what training sequence used in the transmitter must be conveyed to the receiver.

Moulsley discloses the training sequence as part of the header. Moulsley also discloses the information contained in the header is varied (Col. 3, line 49-51; Col. 7, line 15-24, 49-55). Further, the header contains indications to enable the receiver to efficiently locate its data within the frame (Col. 3, lines 66-67). In one example, the header includes indication of modulation scheme (Col. 4, lines 20-22). That is, the header conveys indication of what modulation scheme (is used for the data to be followed) to the receiver.

Therefore, a person of ordinary skilled in the art would have motivated to include the information of the training sequence (used in the transmitter) as and indicator, identifier or a "flag" in the header to provide the receiver the accurate knowledge about the training sequence used, such that the receiver could quickly adjust its operation parameter to combat, i.e., interference. Further, when such indicator or identifier or "flag" is included in the header, a person of ordinary skill in the art would have understood that such indicator or identifier or "flag" must be located before the training sequence itself. Consequently, the training sequence is positioned between "a first portion" and "a first segment" (reference to Figure 2 of Moulsley).

Thus, since both Mousley and Hottinen relate to TDMA system, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the utilization of header and training sequence taught in Mousley into Hottinen so that in a particular situation where different training sequence being used, the receiver would be correctly provided with the information of the training sequence, as a result, adjustment in the receiver is quickly accomplished.

Regarding claim 22, based on the analogy applied to claim 21 above, a person of ordinary skill in the art at the time of the invention would have understood that when such training sequence is used, the rest of the header portion could be collectively called the indicator or identifier or "flag" and such indicator or identifier or "flag" would provide all the information relates to the signal followed including the modulation scheme (Mousley, Col. 4, lines 22-22). Therefore, the claimed subject matter "wherein the at least one flag indicates a modulation scheme applied to the first segment, and any subsequent segments transmitted within the data packet" would have been obvious to one skilled in the art.

6. **Claims 1-4, 7-9, 11-13, 16-18, 25-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mousley in view of Hottinen and the admitted prior art.

Regarding claim 1, the same analogy in claim 21 is applied here. That is, Mousley also discloses a receiver section (Figure 8). When the transmitter using such technique described in claim 21 above is to transmit to the receiver, the receiver will receive the signal having the same structure as that when it is transmitted from the transmitter. That is Mousley and Hottinen collectively also discloses the claimed

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subject matter "receiving an initial portion of a data packet at the receiver, the initial portion containing at least one flag to identify a corresponding reference training sequence to be selected by the receiver and to indicate whether a training sequence is inserted in the data packet; receiving the training sequence at the receiver according to the at least one flag, the training sequence being positioned within the data packet at a midamble between the initial portion and a first segment of the data packet". Further, claimed subject matter "comparing, at the receiver, the received training sequence with the selected reference training sequence; and generating one or more correction signals based on the results of the comparison" in a conventional process when a training sequence is utilized and this process is also disclosed in the admitted prior art on page 3, lines 3-13.

Regarding claim 2, the admitted prior art further discloses the claimed subject matter "adjusting equalization parameters of the receiver based on the one or more correction signals" on page 3, lines 9-13.

Regarding claims 3, 4, see claim 22 above.

Regarding claim 7, see claim 1 above. Further, when the signal includes a "flag" indicating what training sequence to be used, it would also indicate "whether a training sequence is inserted". Therefore, the rest of the header portion as described above would teach both the "first flag" and "second flag".

Regarding claims 8-9, see claims 2-3 above, respectively.

Regarding claim 11, see claims 1 and 21 above.

Regarding claims 12-13, see claims 2-3 above, respectively.

Regarding claims 16-18, see claims 1-3 above, respectively.

Regarding claim 25, see claim 2 above. Further, claimed subject matter "computer-readable storage medium having computer-readable program code means embodied in said medium" would have been obvious to one skilled in the art as the intended use.

Regarding claim 26, see claim 3 above.

Allowable Subject Matter

7. **Claims 5-6, 10, 14-15, 19-20, 23-24, 27-28** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jaffe et al. (US 6,693,566) disclose Interspersed Training For Turbo Coded Modulation.

Siwiak (US 5,537,398) discloses Apparatus For Multi-Rate Simulcast Communications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 703-306-5536. The examiner can normally be reached on 5/4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in dark ink, appearing to read 'Dac V. Ha', with a long horizontal flourish extending to the right.

Dac V. Ha
Examiner
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